

*Proceedings of XIII-th National Conference on Atomic and Molecular Physics
held at the Department of Theoretical Physics, Indian Association for the
Cultivation of Science, Jadavpur, Kolkata-700 032 during 16-20 January, 2001*

Invited Papers

Above and below Wannier threshold ionization

D S F CROTHERS AND N C DEB

Quasi-atoms, super-atoms and quantum confinement

J P CONNERADE

New insights into small-angle electron scattering : guiding measurements

A Z MSEZANE AND Z FELFLI

Single and multiple ionization of atoms by electron impact

HUBERT KLAR

Laser cooling, evaporative cooling and Bose Einstein condensation

PRADIP N GHOSH

Inner shell ionisation with low velocity heavy ions

MANORANJAN SARKAR

Recent developments in multiphoton strong-field physics

MAN MOHAN

Does hyperfine quenching affect significantly the $^1P_2^0$ level in He like vanadium ?

T NANDI

Contributed Papers

Application of multidimensional SSQM formalism to He atom

BARNALI CHAKRABARTI

Energetic photoionization of neutral and ionic metal clusters

HIMADRI S CHAKRABORTY AND M E MADJET

Line strengths and line shapes of zero-phonon absorption features
in solid hydrogen

A P MISHRA AND T K BALASUBRAMANIAN

Physics of positronium acceptor complex formation reactions

DEBARSHI GANGOPADHYAY, TAPAS MUKHERJEE, BICHITRA NANDI GANGULY
AND BINAYAK DUTTA-ROY

Channeling radiation from relativistic electrons and positrons

S V S NAGESWARA RAO, L N S PRAKASH GOTETI AND ANAND P PATHAK

Isotope shifts in UV lines of dysprosium : confirmation and new assignments of $4f^9 5d 6s 6p$, $4f^9 6s^2$ configurations to energy levels of Dy I

B K ANKUSH, M N DEO, A VENUGOPALAN AND S A AHMAD

Experimental investigation of angular dependence of scattering differential cross sections in double photon compton scattering

B S SANDHU, M B SADDI, B SINGH AND B S GHUMMAN

Positronium formation in helium with electron correlation effect

SABYASACHI KAR AND PUSPAJIT MANDAL

Three-body recombination at low temperature – a field theoretic approach

S BHATTACHARYYA, A ROY AND B MITRA

Single photo-ionization of He – a QED approach

SUJATA BHATTACHARYYA, SANCHITA MITRA AND JHUMA BANDYOPADHAYA

Normal coordinate analysis of deuterated benzonitriles

A PAVAN KUMAR, K SRI RAMULU AND G RAMANA RAO

Normal coordinate treatment of some pyridines

B VENKATRAM REDDY AND G RAMANA RAO

Time reversal symmetry breaking superconducting states in cuprates

ANGSULA GHOSH

A new technique for high resolution emission spectroscopy of rare and radioactive isotopes

A P MARATHE, A VENUGOPALAN AND B N JAGATAP

Rovibrational matrix elements of multipole moments of the heavier isotopomers of molecular hydrogen

A P MISHRA, S V N BHASKARA RAO AND T K BALASUBRAMANIAN

Intensity and spectral distribution of 662 keV gamma rays compton scattered from bound electrons of tinBHAJAN SINGH, JAGJIT KAUR, GURDEEP SINGH, B S SANDHU
AND B S GHUMMAN**Electron impact ionization of multiply charged ion : a BE study**

KRISHNA K PRASAD, RAKESH RANJAN, SURESH K SHRIVASTAVA AND ANIL KUMAR

High resolution studies of $A^3\pi_0 - x^1\Sigma^+$ band system of InCl

M D SAKSENA AND M N DEO

Transport properties of gas mixtures

KULDIP SINGH

Relativistic calculations of positron scattering from xenon (Xe) atom

NEERJA AND A N TRIPATHI

Time-dependent changes in the charge-transfer spectra of ferrocene in halocarbon solvents after photoexcitation

A THANDER AND B MALLIK

Superelastic electron scattering from potassium atoms

RAJESH SRIVASTAVA AND SACHIN SAXENA

Millimeter and submillimeter wave spectral studies of $^{13}\text{CD}_2\text{F}_2$

R D'CUNHA, K KAWAGUCHI AND M N DEO

High resolution spectroscopic studies of methyl acetylene : analysis of ν_1 band of CD_3CCH

R J KSHIRSAGAR, GEETHA RAJAPPAN AND R D'CUNHA

Design and fabrication of a TOF spectrometer and a 45° – parallel plate electrostatic analyzer

R K MOHANTA, RAJESH KUMAR SINGH AND R SHANKER

Two photon excitation using L^2 technique

R KUNDLIYA, V PRASAD AND MAN MOHAN

Computerized electronic locking system for diode laser frequency locking by saturated absorption spectroscopy of cesium

S J GAUR, S PRADHAN, K G MANOHAR AND B N JAGATAP

Photoionization of noble gas atoms

S N TIWARY, R R PANDEY AND R P ROY

Laser cooling and trapping of cesium atoms in a magneto-optical trap

S PRADHAN, A P MARATHE, S J GAUR, A VENUGOPALAN, K G MANOHAR AND B N JAGATAP

Theoretical elucidation of the infrared activity of "symmetry-forbidden" overtone bands of CO_2 induced by asymmetric isotopic substitution

T K BALASUBRAMANIAN AND R J KSHIRSAGAR

Synchronization in chaotic Jerk dynamical systems

V PATIDAR AND K K SUD

Incoherent scattering functions of some medium and heavy elements at 4.808 \AA^{-1} photon momentum transfer

N GOVINDA NAYAK, GERALD PINTO AND K SIDDAPPA

Two photon ionization using pseudostate summation technique

R KUNDLIYA, K BATRA AND MAN MOHAN

Time evolution of SERS of α – Bithiophene and α – Terthiophene adsorbed on Ag-sols

UTTAM K SARKAR AND T N MISRA

Theoretical total cross sections of $e\text{-H}_2\text{O}$ collisions in water, ice and dimer forms

K N JOSHIPURA, MINAXI VINODKUMAR, B K ANTONY AND C G LIMBACHIYA

Ionized helium induced ionization of atomic hydrogen

S BHATTACHARYA, S SAHOO, R DAS AND K ROY